

CROW WING COUNTY

November 30, 2019 Snow Event #20 - 2019 - 06

| Reported Event Conditions | |
|---------------------------|--------------|
| Date: | 11/30/2019 |
| Event No: | #20 2019 06 |
| Begin Time: | 11/29/19 4PM |
| End Time: | 12/1/19 9AM |
| Weather: | Snow |
| Precipitation: | 14" |
| Temperature: | 31°/6 |
| Wind: | 10-35 MPH |

| Event Costs | |
|----------------|------------------|
| Salt | \$39,609 |
| Sand | \$0 |
| Brine | \$5,756 |
| Equipment/Fuel | \$64,000 |
| Personnel Reg. | \$22,246 |
| Personnel OT | \$9,006 |
| Total | \$140,617 |
| Cost Mile | \$251 |
| Season Total: | \$256,611 |

| Priority By Route | |
|-------------------|------|
| Priority 1 | |
| % Target 1A Met: | 100% |
| % Target 1B Met: | 7% |
| Priority 2 | |
| % Target 2A Met: | 100% |
| % Target 2B Met: | 48% |
| Priority 3 | |
| % Target 3A Met: | 100% |

Legend

— MnDOT Highway

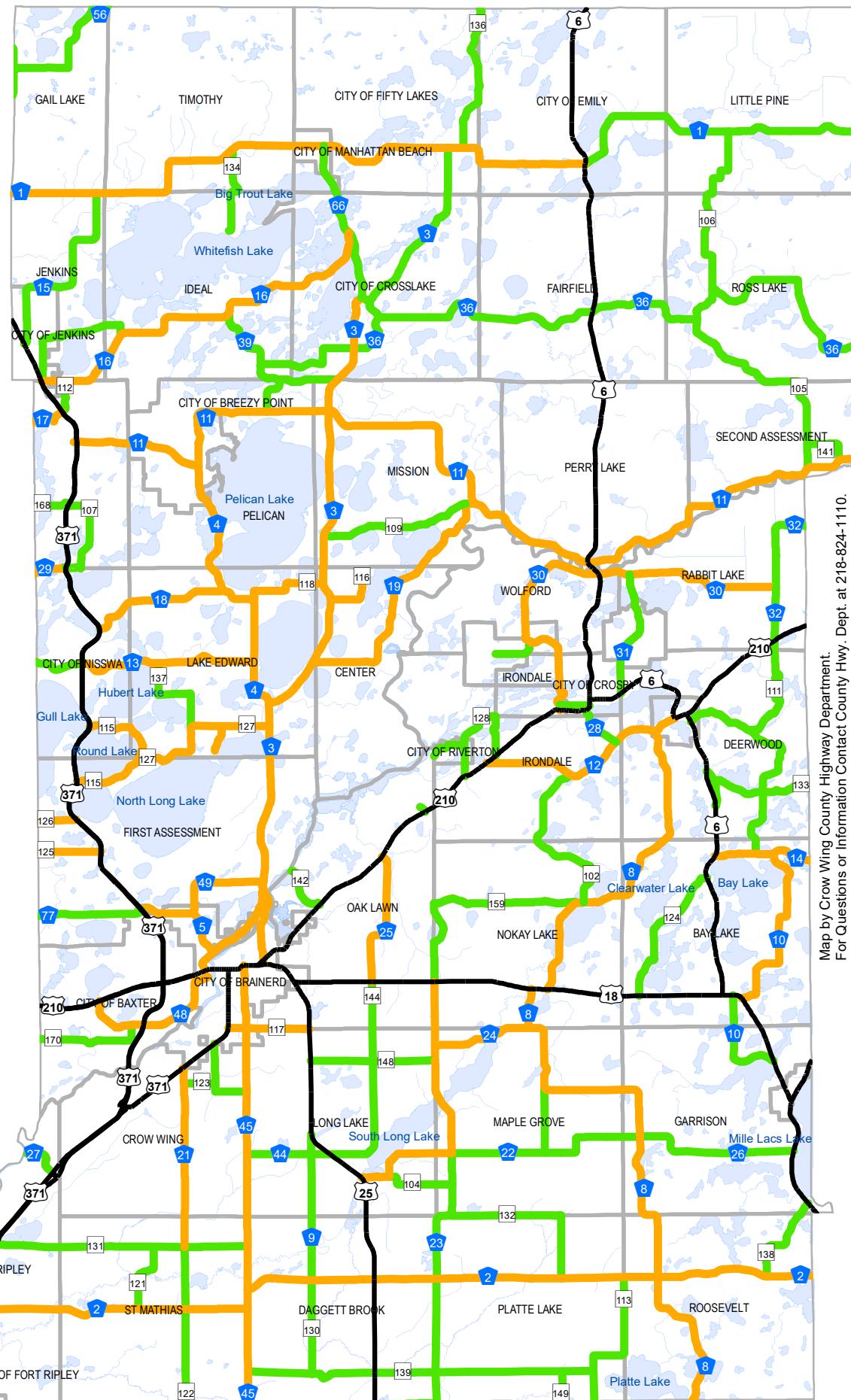
Route Priority

- 1 (ADT>5000)
- 2 (500>ADT<500)
- 3 (ADT<500)

Route Target

- Target Achieved
- Target Partly Achieved
- Target Not Achieved

Report Date: 12/6/2019



Map by Crow Wing County Highway Department.
For Questions or Information Contact County Hwy. Dept. at 218-824-1110.
For Information on State Highways Contact MnDOT at 218-828-5700.

2019/2020 Summary For Snow Event #20 - 2019 06

Date 11-30-19

| Salt Tons | Salt \$ | Sand Tons | Sand \$ | Brine gal | Brine \$ | Mat. Total | Equip \$ | Reg. Personnel | OT \$ |
|-----------|----------|-----------|---------|-----------|----------|------------|----------|----------------|---------|
| 489 | \$39,609 | 0 | \$0 | 8721 | \$5,756 | \$45,365 | \$64,000 | \$22,246.00 | \$9,006 |

Total \$140,617

53 Plow hrs.

\$2,653 per/hr.

909 Man hrs.

\$251 per/CL/mile

\$5.30 per/household for entire County

Forecast

Snow forecasted to begin at 12 a.m. 11-30-19 and continue until 9 a.m. on 12-1-19.

Pre Plan

Start plowing roads at 8 a.m. on 11-30-19. Concentrate on drive lanes and apply 400 lbs. only at intersections due to continued blowing and falling snow. Continue plowing until 8 p.m. on 11-30-19, then rest the operators. Resume plowing at 5 a.m. 12-1-19. Once the snow stops, turn around and replow drive lanes, apply 400 lbs. of salt and scrape shoulders.

Actual Event

Event start: 4:00 P.M. 11/29/19

Event ended 9:00 A.M. 12/1/19

Comments

Trucks began plowing at 8:00 a.m., only applying at intersections. Roads had approximately 1"-2" of snow and a thin layer of ice underneath when plowing began. Snow continued to fall and traffic compacted the snow to the roads, making it very difficult to scrape off. Applied 400 lbs. per lane mile on 12-1-19. Continued to scrape and apply through Wednesday.

Conditions

Snow started and ended as forecasted. Thick compaction from the heavy wet snow and traffic compacting it along with drifting snow in open areas created challenges for the plow trucks to achieve bare wheel paths.

| Road | Road Temp | Date | Time | Air Temp |
|--------|-----------|----------|---------|----------|
| CR 142 | 23 | 11\30\19 | 9:00 AM | 28 |
| Cr 12 | 28 | 12\1\19 | 9:00 AM | 24 |
| HWY 6 | 23 | 12\2\19 | 9:00 AM | 24 |
| Cr 3 | 12 | 12\3\19 | 9:00 AM | -3 |
| | | | | |

| Date | High | Low |
|------------|------|-----|
| 11/28/2019 | 25 | 20 |
| 11/29/2019 | 31 | 24 |
| 11/30/2019 | 30 | 28 |
| 12/1/2019 | 28 | 6 |
| 12/2/2019 | 24 | -3 |

Source: weather.com. Monthly Weather. 56401

Summary

Strong winds (15-35 mph) and wet heavy snow created major challenges for obtaining bare wheel paths. The snow bonded and stuck to roads, making it difficult to cut and melt off.

Decisions Made

Start plowing at 4 a.m. and apply 200 lbs. to criticals and then 400 lbs. of salt on the next passes.

Lessons Learned

We saw slightly better results with applying salt throughout the event versus just at critical intersections initially but still struggled on some roads where salt was applied during the event. Warmer temps helped Tuesday and Wednesday as we had motor graders out cutting still compacted snow. The application rate of salt was consistent with recommended guidelines and with what MNDOT was applying.

Goals Met/Not Met

| | Plowing | Goals |
|------------|---------|--------|
| Priority 1 | Met | 6 hr. |
| Priority 2 | Met | 12 hr. |
| Priority 3 | Met | 18 hr. |

| | Bare wheel paths | Goals |
|------------|------------------|--------|
| Priority 1 | Not Met | 18 Hr. |
| Priority 2 | Not Met | 48 hr. |